

## Recycling Catholic Institutional Buildings into Affordable and Alternative Housing: Three Case Studies

### BACKGROUND

Québec City has an untapped housing resource—convents and other religious institutional buildings (for example, orphanages, asylums, hospices, schools, and hospitals) that Roman Catholic religious communities no longer need. Many of these buildings were acquired in the late 1960s and early 1970s by the provincial and municipal governments, private and public developers, charitable and non-profit organizations. More keep coming on the market.

Helping find a new use for these buildings solves several problems: preserving important monuments; encouraging sustainable development in Canadian cities; providing affordable housing in major Canadian urban centres such as Québec; and providing housing to disadvantaged groups in society, which is also the extension of the mission of many of the religious orders who built the buildings.

Private developers often would rather demolish religious institutional buildings than recycle them. If a building has been left neglected, costs can be a major barrier. The original layout of the buildings can make it difficult to accommodate conventional housing units. Technical issues and stringent adherence to building codes also complicate the process. Zoning issues and neighbourhood opposition make some developers shy away from converting them. Most often it is the location and size of the property that interests them.

Market-rate condominiums appear to be the most profitable redevelopment type for these properties. But to convert these into affordable housing, government and other outside help is required. The affordable and alternative housing projects in this study, some of which integrate other social services (for example day-care centres, training programs), often benefited from partnerships that brought together the non-profit and private sectors with the public and governmental groups.

But how successful is this approach to providing affordable housing in Québec City and is conversion a more sustainable option than new construction?

### METHODOLOGY

Using three case studies of former religious institutional buildings that were converted to affordable housing, the general objective of this research is to:

- chronicle the conversion process;
- document the roles of the various players involved in the recycling of the buildings (such as the religious community, non-profit or charitable organizations, government officials, architects and users);
- identify what was used in each situation to create affordable housing that caters to a distinct population from existing buildings;
- evaluate the reasons for successes and failures; and
- make recommendations for future conversions of religious institutional buildings.

## Research Highlight

### Recycling Catholic Institutional Buildings into Affordable and Alternative Housing: Three Case Studies

The study began with an inventory of about 30 Roman Catholic religious institutional buildings in Québec City that had been converted to affordable and alternative housing. (Figure 1) Three were selected as case studies—the ones that best fit the criteria (size, location, former and current function, clientele and date of conversion) that are typical. The three were:

- Centre Jacques Cartier, a former school now providing affordable housing and other functions for youth; (Figure 2)
- Domaine des Franciscains, a former monastery now housing seniors; (Figure 3)
- Habitations du Trait Carré, a former convent now housing seniors. (Figure 4)

Ten residents in each case study were interviewed to learn about how the buildings and properties respond to their needs, what could be improved and how affordable the units are relative to nearby rental units. In addition, 10 neighbours were interviewed to learn how the projects were received and to assess the impact of the project on the community.

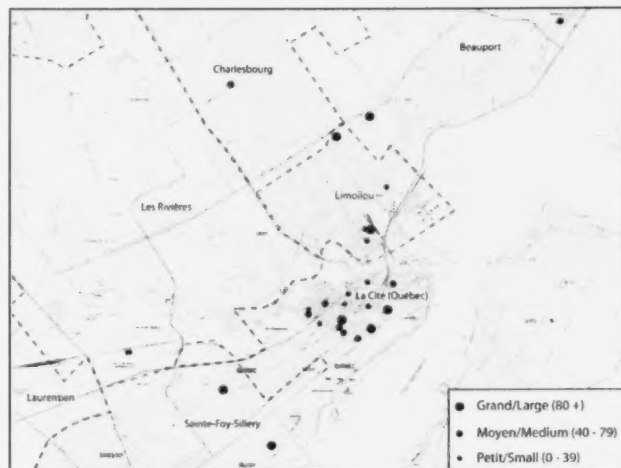
The architects for each project were interviewed to determine what their goals were in the design, what specific challenges and solutions of the conversion were, and how they sought to solve the particular needs of the residents.

Members of the religious community, the non-profit or charitable organization, the developer, the chief municipal planner and municipal and provincial housing officials involved in each case study project were also consulted. They were asked for information about project budgets, restrictions, if any, in the granting agency's program, as well as policies that might have affected the design and management of the housing project.

## FINDINGS AND RECOMMENDATIONS

### Technical issues

Architects are challenged both in plan and elevation by certain existing features. Ceiling heights and windows are a more generous size than is standard for a residential project. It is difficult to fit housing units into certain communal spaces, such as chapels.



**Figure 1** Location of the inventoried Catholic religious institutions converted into affordable and alternative housing in Québec. The size of the dots represents the number of units in the converted building.



**Figure 2** View of the back of the Centre Jacques Cartier, along Charest boulevard, showing its urban context

Meticulously documenting existing conditions was a critical step. Exploratory testing and documenting existing conditions helped determine structural weaknesses, the composition of walls and floors and what had to be done to make the buildings safe. It is a step that prevents unexpected problems and makes the already difficult task of budgeting more realistic.

The strategy adopted by most architects and their clients was to integrate mainstream rental housing units within the shell of the existing building in compliance with the applicable building codes and municipal regulations. In fact, survey respondents for the three case study projects noted that the changes to the buildings are imperceptible from the outside.

While the buildings' exterior appearance was restored, preserving interior heritage features was a lesser priority. In many cases, interiors were completely altered to make the spaces functional. Limited budgets meant putting in as many units as possible, thus major changes to the interior layout were often necessary.

Converting religious institutional buildings such as schools, convents and monasteries (the former uses of the 3 case studies), is easier than converting churches and chapels. The large volume of interior space in churches and chapels must be broken up and new openings must be pierced in the exterior walls. Sometimes floors have to be added, vertically dividing the building and segmenting the tall windows.

In a convent or school, the space is already divided up, making it easier to integrate housing units. The location of windows and access points are more adapted to residential uses. But their monumental and institutional character needs to be softened.

Religious institutional buildings generally have narrow footprints or floor areas. They must have a certain depth for a change in use to work. If they are too narrow, it is difficult to fit a through-unit or a double-loaded corridor plan within the existing envelope. Each of the three projects is different in this regard.



**Figure 3** View of the Domaine des Franciscains in its neighbourhood context. The office building in the background is located along a major artery of Upper Town.



**Figure 4** Views showing the exterior of the former convent-school and its relationship with the parish church at the end of the block in the Trait Carré historic district

The form can be so restrictive that it is impossible to fit conventional housing units into it. There is less flexibility than with new construction. But architects who work creatively within the buildings' limits can reap a real payoff in terms of the quality of life and supportive environment the project engenders.

The change in function of the building requires change in mechanical systems to compensate for new heating and cooling loads and humidity levels. Recent advances in environmental comfort and control that promote natural ventilation and cooling methods, and passive heating, and that take advantage of the thermal qualities of thick masonry walls could compensate for new loads and levels.

While conventional electric baseboard heating systems might adequately counter the effects of draft created by minimum-standard windows, they do not counter drafts created by the oversized windows found in these buildings. Moreover, by the nature of cast iron radiators, hot-water heating systems radiate heat better than electric baseboards. Developers might consider keeping this older technology rather than replacing it. Alternatively, to reduce drafts, other technologies should be explored, such as radiant-heated floors.

All three case study buildings have single-facing units arranged along a double-loaded corridor. Before conversion, transom windows above interior doors could be opened for cross-ventilation. But these were closed for the sake of privacy. Architects might consider incorporating transoms that can be opened, or developing other ways of allowing natural ventilation without compromising privacy or fire safety, such as designing through-units with openings at the front and back.

The future uses of these converted religious buildings could be widened. For example, the convents had fully equipped industrial kitchens that would be useful for student residences and assisted living facilities.

Architects could explore different ways of organizing the units within the existing structure, for example, terrace housing, which in effect would cut the building salami style rather than in horizontal layers. Or, alternatively, they could propose flats, similar to the triplexes and walkups common in Quebec, with six to eight apartments sharing a common stairwell or an outdoor corridor, rather than an interior one.

Designers should pay more attention to soundproofing and treat converted buildings differently than new ones. When religious communities lived in the buildings, they had rules governing the behaviour of individuals that reduced the amount of noise. Today, people tend to expect that the standards of new construction will be applied to renovated structures, standards that can be achieved provided the architect implements an appropriate strategy.

## Financial Issues

There seems to be conflicting points of view about whether adaptive reuse costs more than new construction. It is easier to estimate the cost of a new building. Normally there are fewer unforeseen variables. Yet as this study demonstrates, converting an existing building that has been well-maintained over the years can be significantly cheaper than new construction—in some cases, more than 25 per cent less.

Costs related to excavation, structural systems and building envelopes represent up to 60 per cent of the total construction costs in a new building. These costs are much reduced in an adaptive reuse project. In contrast, costs associated with conforming to building codes, such as the installation of an elevator or sprinklers, represent one to five per cent of the total construction costs.

These observations and the expenses related to soil decontamination partially explain why the average cost per unit for new units in a second, new purpose-built phase at the Domaine de Franciscains was significantly more than units in the converted monastery. In all three case study buildings, the conversion costs were less than what it would have cost to build new. (Table 1)

**Table 1** Comparison of the estimated costs of conversion of the case study buildings and the costs of new construction in Québec City in the years the projects were realised.

	1999* Means estimate \$/sq. ft.	1999-2000 Trait Carré \$/sq. ft.	1993* Means estimate \$/sq. ft.	1993 Centre Jacques Cartier \$/sq. ft.	1982* Means estimate \$/sq. ft.	1982 Domaine des Franciscains \$/sq. ft.
4-7 storeys, brick, steel structure	\$12.30	\$56‡				
4-7 storeys, brick, wood structure			\$102.49	\$60†	\$72.80	\$54††

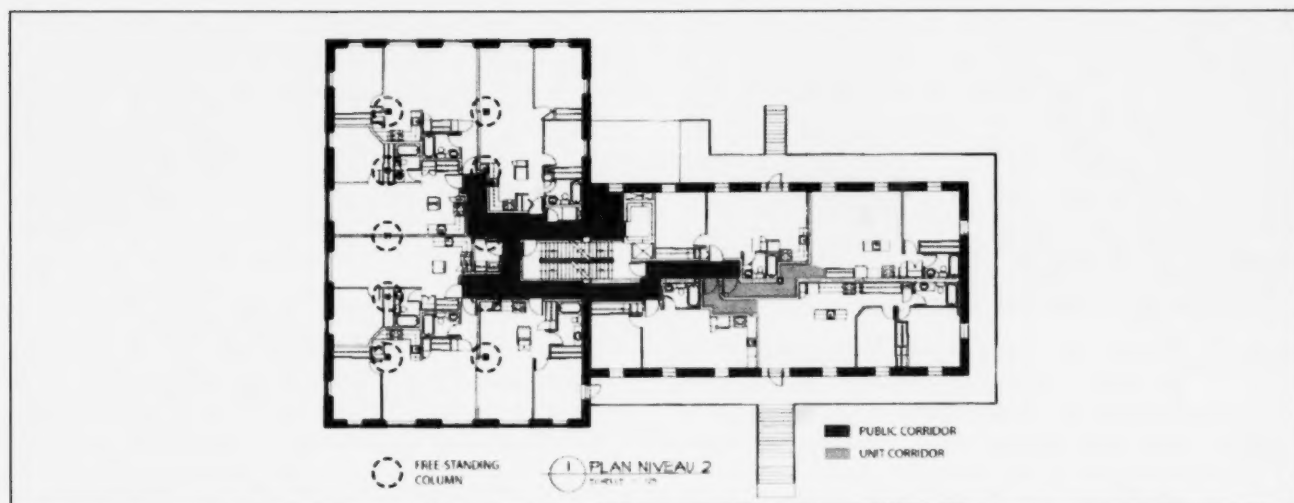
**Source:**

\*Estimates for the costs of new construction, adjusted for Québec City, are taken from Robert Snow Means Company, Means square foot costs: residential, commercial, industrial, institutional, (Kingston, Mass.: R.S. Means Co., 2005). Note that the square foot estimates have a relative accuracy of plus or minus 15%.

‡ Gross estimates for the project as provided by the architect. This amount includes demolition costs and taxes, but not professional fees.

† Gross estimates for the project as provided by the architect. This figure represents construction costs and does not include professional fees or taxes. It also does not include demolition costs since the residents conducted the work.

†† This figure was calculated by dividing the average conversion cost of \$38,000 by an average unit size of 700 square feet.



**Figure 5** Second-level floor plan of the Habitations du Trait Carré showing the unit layouts. Note the labyrinthine corridor system. Originally, the convent would have featured a central corridor serving rooms on either side, or one large open space on the floor. Also note the free-standing columns in the units on the left. Schematic plans derived from those provided, courtesy of the property manager, based on the architect's plans.

Unfortunately, life cycle costs and environmental impacts are rarely considered. More research is needed in this area. For example, rather than demolish building interiors, it could prove worthwhile to reuse materials and save more of the interiors. Economic considerations should be balanced with environmental, heritage and social ones.

The costs of adaptively reusing a building are higher when a building has been abandoned and allowed to deteriorate. Municipalities, building owners, and occupants need to establish new uses early if they are to save on renovation and restoration costs.

The process of finding partners and financial resources was complex and time-consuming. Most architects and technical resource groups had developed expertise in navigating through different subsidy programs and policies. Some of the experts interviewed had acquired almost 30 years of experience. Over time, they modified their activities to keep pace with changing government programs, such as finding new sources of funding, partners and ways of reducing costs.

The architects necessarily worked within limited budgets, which perhaps precluded any experimentation they may have wanted to attempt in designing social housing. None of the architects specifically mentioned special efforts to improve the energy efficiency of the buildings, except for replacing single-pane windows with thermal glass to reduce tenants' heating costs.

Limited budgets sometimes had a negative effect on the distribution of spaces and unit layout. In an effort to maximise the number of units some architects were forced to disregard the internal logic of the original building. In one example, the labyrinthine corridors went off in different directions and some units had long passageways to get from the door to the main living spaces. (Figure 5) Poor unit layout made the units seem small and inflexible, according to some residents of all three buildings.

Some people spend a lot of time in the kitchen. Rather than think of them as service spaces that can be placed far from windows, architects might better conceive them as living spaces, placed closer to windows. The units in all three case study buildings have open concept plans common to late twentieth-century homes in which living-dining areas are adjacent to the kitchen so that the kitchens can borrow light from the living-dining rooms placed next to the existing windows.





**Figure 6** Interior views of two bedrooms in two units of the Habitations du Trait Carré. Note the wide sill on which the occupant placed houseplants (left). The middle-right light of the casement window can be opened by itself, as can the whole casement window, as shown in both images.

Lack of sufficient funds was consistently identified as a problem in saving all of the heritage aspects of the buildings, which raises the question of whether such conversions are the best way to preserve local heritage. Yet, the ways existing programs are structured contain systemic biases against conservation, favouring replacement instead. In the three case studies, architects had to work within a standard budget for low-income housing. Within the traditional bid structure, contractors find it easier to replace floors, staircases and doors than to repair them, because repairing takes more time.

One recommendation is to review funding policies and objectives. Some municipalities, including Québec City, have special programs to cover the costs of restoration for buildings located in historic districts. However, most of the buildings in this study's inventory were not designated structures or located within a historic district and were ineligible for special municipally administered restoration grants.

Funding agencies might consider topping up regular grants to reward projects that make a special effort to restore and rehabilitate existing buildings in ways that respect their character, defining features, exteriors and interiors. They could use a program such as the Commercial Heritage Properties Incentive Fund established by Canada's Historic Places Initiative<sup>1</sup> as a model for creating incentives for producers of affordable and alternative housing.

Older buildings require constant maintenance. Current funding programs cover the initial conversion costs, but not longer-term maintenance. Perhaps additional funds for maintenance could be made available when conserving built heritage is part of a housing project's objectives.

Another recommendation is to set aside amounts to document existing conditions and prepare sustainability studies, especially with regards to building comfort performance. A database containing local case studies of conversion projects could bring together pertinent information, costs and valuable lessons learned when particular adaptive reuse approaches were used. Not only would this help debunk myths about adaptive reuse but also help those planning projects to identify potential problems, avoid pitfalls, and propose inspiring new solutions that improve on preceding projects.

Even with thorough documenting of existing conditions, unanticipated conditions can reveal themselves after the renovation has begun. Generally a contingency of 10 per cent is built into the budget, but some architects recommend putting a 15 to 20 per cent contingency in the budget to cover unanticipated costs in adaptive reuse projects.

<sup>1</sup> For more information see Parks Canada "Historic Places Initiative," English and French, retrieved January 2009 from [http://www.pc.gc.ca/progs/plp-hpp/plp-hpp1\\_E.asp](http://www.pc.gc.ca/progs/plp-hpp/plp-hpp1_E.asp)

## The neighbourhood and heritage context

Neighbours would rather see older buildings converted than see new construction. For them, the outside appearance of the building is an important factor at the neighbourhood scale. Most felt grateful that new functions were found for these buildings, rather than tearing them down and said they would have protested against new construction on those sites.

In general, key actors, neighbours and occupants viewed the recycling of former religious institutions as a means of retaining local heritage as well as providing affordable and alternative housing.

Not only does this approach foster the conversion of existing built resources, it allows people to stay within their neighbourhood. Compared to other forms of social housing, former convents and schools offered rich spatial qualities, particularly because of their large windows and tall ceilings. Yet, what occupants most appreciated about their building, more than the heritage aspects, were the modest rents, the neighbourhood and proximity to services.

All three case study buildings conformed to some degree to municipal plans for neighbourhood revitalization. The conversions of these buildings and the financial investments that they represented had positive impacts on properties within the immediate area. Many of the buildings in the inventory were located in neighbourhoods that had aging populations. It made sense to convert available buildings to house area residents. This approach maintains the existing economic and social mix, stemming the process of gentrification. Conversely, the local population is less likely to oppose a project that seeks to help their neighbours.

Because no changes in zoning were required in the cases studied, there was no public consultation. No complaints were recorded in the media.

In light of the next wave of adaptive reuse in Québec City, a mixed-use formula deserves renewed consideration. This approach combines affordable and market-rate units in the same project. Mixing clientele and housing types on a single property could partially counter Not in My Backyard (NIMBY) problems. It could reduce the perceived threat of invasion by poor or otherwise disadvantaged people in a neighbourhood and the perceived negative impact it has on property values.

The use and configuration of outdoor spaces could be improved, especially on small sites. Parking areas could be reduced, especially when the housing project is well-served by public transit and other services. Survey respondents preferred to have more plots for community gardens.

Some of the survey respondents wanted greater mixture in the buildings. They seemed to welcome cultural, commercial, social and recreational uses. Parts of the building should be open to people from the outside, much like at the Centre Jacques Cartier, where the dining room-café acts as an interface with the larger community because it is open to non-residents as well. Survey respondents also saw such programming as maintaining the former use of the building.

## CONCLUSIONS

By recycling Catholic convents and other religious institutional buildings, Québec City and other Canadian municipalities will not only be able to keep an important architectural heritage but also address the lack of affordable housing in relatively inexpensive and creative ways.

Such buildings are ideally located, often in the centre of a neighbourhood or city, close to existing services, amenities and transportation infrastructure. They make enriching environments in which to live. They can act as engines for revitalisation and development.

Their conversion also allows for the seamless integration of disenfranchised groups of people into otherwise socially and economically homogenous parts of the city. Also, less demolition means reduced landfill demand and waste of energy and resources. In all three case study buildings, the conversion costs were less than what it would have cost to build new. In summary, adaptive reuse of these buildings makes sense economically, environmentally and socially.

## Research Highlight

Recycling Catholic Institutional Buildings into Affordable and Alternative Housing: Three Case Studies

**CMHC Project Manager:** Susan Fisher

**Consultant:** Tania Martin, École d'architecture,  
Université Laval

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or contact:

Canada Mortgage and Housing Corporation  
700 Montreal Road  
Ottawa, Ontario  
K1A 0P7

Phone: 1-800-668-2642

Fax: 1-800-245-9274

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